

DEVELOPMENT OF MOLECULARLY IMPRINTED POLYMER(MIP)  
BASED ON METACRYLIC ACID AS A SELECTIVE ADSORBENT  
OF  $\text{Cu}^{2+}$  IN ELECTROPLATING LIQUID WASTE

*Siti Marwati, Isana SYL, Regina Tutik Padmaningrum, Annisa Fillaeli*  
*Chemistry Education Department, Mathematics and Natural Sciences Faculty*  
*Yogyakarta State University*  
[Siti\\_marwati@uny.ac.id](mailto:Siti_marwati@uny.ac.id)

*Abstract*

The aims of this research to synthesize Cu-MIP by using methacrylic acid (MAA) as functional monomer, ethylen glycol dimethacrylate (EGDMA) as acrosslinker, benzoyl peroxide (BPO) as initiator and  $\text{Cu}^{2+}$  as a template. In addition, the purpose of this research was to determine the adsorption capacity and of Cu-MIP against of  $\text{Cu}^{2+}$  in electroplating liquid waste.

The Cu-MIP synthesis was performed by reacting  $\text{CuCl}_2$ , MAA, EGDMA and BPO dissolved in chloroform, then flushed nitrogen gas for 2 min. Polymerization was carried out for 18 hours. The template release process was performed using 2 M  $\text{HNO}_3$  solution for 24 hours. To determine the amount of Cu that is bound and the most relaxed from Cu-MIP is done by using AAS. As a control, NIP synthesized, MIP without ion templates, in the same way in Cu-MIP synthesis. Adsorbtion was carried out for 1 hour using Cu-MIP and NIP adsorbents of 0.5 g.

The results obtained in this research have been done the synthesis of Cu-MIP and NIP based MAA by using  $\text{CuCl}_2$  as template, MAA as functional monomer, EGDMA as crosslinker and BPO as initiator and obtained Cu-MIP and NIP in the form of white solid and somewhat brittle. Capacity 1.19 mg/g for Cu-MIP and 0.39 mg/g for NIP.

Keywords: Selective Adsorbent, MAA, Melcularly Imprinted Polymer